HYSTERIC AMBLYOPIA

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the upper rod appears directly above or to the left of the lower. There is no guessing possible, as all the observations to be made are unmistakable. The two circles are so centered that when fused the disparateness of the retinal images of the two pairs of rods is equal but opposite. This prevents the upper or lower rods from being seen double as otherwise might be the case. The dark background in the circle on the left serves two purposes: first, it produces the same effect as the smoked glass referred to, and thus, in the case of stereoscopic vision, makes the upper rod appear definitely to the right of the lower; and second, by making the background appear dark and lustrous within the circle it certifies that the diagram on the left is not being suppressed. This is further certified by the white dots, which show that the rods in the latter diagram are being "fused" with the rods in the other diagram. In this diagram the upper rod is placed slightly to the left of the lower, for if it were directly above, the observer might imagine it was slightly to the right if he used the left eye alone. When there is stereoscopic vision, the dots will at first appear to lie within the rods, but careful observation will show the lower dot behind its rod. The dots really appear in the horopter, and their positions, therefore, vary as the point of fixation varies.

These tests are, of course, not applicable when the observer has insufficient visual acuity in one or both eyes to distinguish the rods and dots plainly. Certain individuals with low visual acuity may have perception of relief dependent upon widely disparate images, but I know of no test that will demonstrate this with more than a high degree of probability.

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HYSTERIC AMBLYOPIA

Report of three cases

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The three cases described illustrate the type of subject in whom this condition may appear. In two of them it was unilateral. Perfect vision was restored by suggestion, in two cases after lumbar puncture and in the third after ether narcosis for an unrelated operation. Read before the Pacific Coast Oto-Ophthalmological Society in Seattle, Washington, June 30, 1932. From the Department of Ophthalmology, University of California Medical School.

Hysteric amblyopia has been recognized for many years. It was well described during the last century by such men as Von Graefe, Charcot, and Leber. During the World War and since that time, numerous cases have been reported.

While hysteria usually is classed as a neurologic clinical entity, it is, properly speaking, a mental disorder, a psychopathologic condition. In the eye, hysteria may show itself in various conditions, such as blepharospasm, conjunctivitis, ptosis, spasm of accommodation, paralysis of extraocular muscles, field changes, and amaurosis. The degree of amblyopia varies from a relatively small amount, to complete blindness. In this report we are concerned primarily with field changes and amaurosis.

In hysterical blindness, most authorities are agreed that the lack of vision is not caused by a failure of the retina to perceive images, but by a functional disturbance of the cortical centers. Both sexes may be affected at varying ages. One of Lewis's[1] patients was only ten years old and another was but fifteen. Although the condition may be unilateral, Duane[2] believes it to be present usually in both eyes. However, it is likely to be of greater degree on the side upon which the general sensibility is affected.

These patients usually possess rather unstable nervous systems, hence, a psychic shock, particularly in the presence of an existing unhappy state, is likely to produce hysteric amblyopia. Burch[3] especially emphasized the importance of this so-called intolerable situation. It usually is based on prejudice, fear unhappy environment, or unfortunate domestic or marital circumstances.

There are two general types of hysteric amblyopia. In the first, there is a history of trauma accompanied by nervous strain or shock in a susceptible person. As a rule, disturbing mental factors are also present. During the World War, a large number of these patients was observed. Eder[4], reported the case of a soldier who was firing through a loophole, the periphery of which was struck repeatedly by bullets. He experienced some watering of the eyes which promptly precipitated an hysteric amblyopia. Lagrange's[5] patient was rendered unconscious by a bomb. Although unharmed by the explosion he developed a complete amaurosis.

In recent years, because of the growth of industrial medicine, there has been added a pecuniary motive intensifying those suggestive influences already present. This is well illustrated in Burch's[3] first case. Great care must be exercised to avoid confusing these hysteric patients with malingerers.

The second type of hysteric amblyopia has been called idiopathetic. In this group, we find no trauma, although a nervous shock, predisposition and an unhappy state are frequently present. At times, blindness suggests a way out of an unpleasant situation. Ames[6] reported two cases, in each of which some feature of the patient's mental life made vision undesirable or suggested blindness as a possible refuge from trouble.

Lewis[1] emphasized the importance of suggestion. One of his patients had

a high degree of hyperopia and one amblyopic eye. Some careless remarks to the child, relative to approaching blindness precipitated hysteric amblyopia. In Campbell's[7] case, amblyopia could be traced to the impression made upon the patient by her father's blindness.

Distressing family life and poor economic conditions may be important factors as illustrated by the cases of Lewis and Burch. In some instances, the additional personal attention received while ill or indisposed, served as a causative factor.

Symptoms and signs in the diagnosis of hysteric amblyopia are well recognized. The most important symptom is loss of vision, unilateral or bilateral, varying as before stated, from a relatively small degree to complete amaurosis.

Closely associated with the loss of vision, are the varying changes in the perimetric fields. The most characteristic field shows a tubular contraction for form to within 10 to 15 degrees of fixation, which does not vary with the change of distance between the patient's eye and the point of fixation. Spiral fields and interlacing color fields also are recognized as typical.

At times, central or paracentral scotomata are present. In these instances, retrobulbar neuritis, multiple sclerosis, and other organic conditions producing central or paracentral scotomata, must be carefully excluded. The hemianopic field is said never to be present in hysteria, yet Garvey[8] reported a case in which homonymous hemianopsia was present. The fact that psychotherapy restored the field to normal seems to prove that the condition was hysteria. Hurst and Symns[9] doubt the value of taking the perimetric fields and feel that the use of the perimeter invariably results in suggesting a narrowed field to the patient. They also stated that they have never seen patients with hysteric symptoms who spontaneously complained of disabilities resulting from a narrow field of vision."

Objective examination of patients with hysteric amblyopia shows a complete lack of pathologic change in the fundus sufficient to explain the visual loss. In addition, direct and consensual pupillary reactions are ordinarily normal. The reactions may be sluggish in some instances or even absent, as in an unusual case reported by Harlan[10] Normal pupillary reactions, while important in the diagnosis of hysteric amblyopia, do not exclude malingering.

Hysteric amblyopia may be complicated by muscle involvement. Lillie[11] reported a case which showed hysteric convergent strabismus. Alger's[12] patient had a similar condition, for which surgery had been suggested. A complete paralysis of extraocular muscles was simulated in our first case.

Therapy in these amblyopic cases naturally varies and must be applied with a good deal of judgment. The patient should never be told that his eyes are normal. In discussing the condition with him, one must admit freely that there is a loss of vision but may explain that the cause has been found and the condition can, and will, be remedied.

Psychotherapy in its various forms is our most important remedy. Many patients have been improved by the use of electricity. Strychnine hypodermics are used widely. Their beneficial effect is probably mental. Moore[13] reported two cases cured by narcosis. Deep ether anesthesia was used, the patients being assured that the seat of the trouble had been discovered and removed. Hypnosis also is used successfully. Lagrange[5] restored the vision in his patient by a pretended operation upon the eye.

Punishment, according to Hertz and Ormond[14], whether suggested or real, is of no value and may do actual harm.

Suggestion is our most important ally in the cure of these cases. The confidence of the patient must be gained to insure success, irrespective of the physical means used. In addition, determination and correction of the intolerable situation is most desirable. In Lagrange's case, the patient was assured that he no longer would be fit for military duty. In one of Burch's patients, the trouble cleared spontaneously when the marital difficulties had been adjusted. There can be little doubt that the majority of miraculous restorations

of vision claimed by Christian Science, faith healers, spiritualism, visits to shrines, or the laying on of hands by pseudo-religious workers occurs in patients suffering from hysteric amblyopia. The cures are based on suggestion and profound faith.

The following widely different cases are reported because each presents some interesting phase:

Case 1. S. E., female, divorced, aged 24, years, entered the University Hospital on Nov. 10, 1929, for a perineal repair. There had been complete bilateral loss of vision for one month prior to entry.

Résumé of history bearing upon ocular conditions: The patient always had been nervous and high strung. She was married at the age of 21 because of her desire for a child. One year later, her pregnancy was terminated at 8 months, the child living only 6 hours. Delivery, by means of high forceps, resulted in a marked third-degree tear. To make matters worse at this time, she was deserted by her husband. The patient was a graduate nurse and after the termination of her pregnancy, worked as night supervisor in a hospital for one year. Because of rectal incontinence, she frequently went several days without eating and, no doubt as a result of this lack of food, she fainted a number of times while on duty.

She had never experienced any difficulty with her eyes until one month before entry, when her vision started to fail and she rapidly became blind. At the time of examination, the patient said that she could see nothing, but could distinguish between light and darkness. She had been examined by a number of ophthalmologists and after each examination she had been told that the condition was purely functional.

Examination showed a well-developed young woman sitting in bed, with fixed eyes looking straight ahead. The general physical examination was negative, except for her gynecologic condition. Ophthalmologically, she could not distinguish the movement of hands before her eyes, nor did she flinch or wink until the eye lashes were touched. The eyes were fixed and did not move in any direction, resembling an ophthalmoplegia externa. The pupils were equal, round, and regular; they reacted well to light, both directly and consensually. Aside from the foregoing condition, the external examination was negative. The media were clear. The fundi were normal, the optic discs being clean cut and without evidence of atrophy.

During the fundus examination when instructed to turn her eyes to one side, she turned her head in that direction but rotated her eyes to the opposite direction.

It was obviously impossible to take perimetric fields.

The ocular condition was diagnosed as hysteric amaurosis.

Treatment: Various types of local treatment to the eyes were used for several days without success. At this time it became necessary to drain a pelvic abscess.

Anticipating the opportunity for psychotherapy, an ether anesthetic was agreed upon. The patient was told that it was most fortunate that narcosis was required at this time, because by it, her vision would be restored completely. As she was a nurse, the underlying mechanism was explained to her as follows: In such functional disorders as hers, visual impulses are short circuited before they reach the visual centers. Under the anesthetic, however, all impulses cease and when consciousness is regained, they again flow along the nerve pathways and pass the spot where previously they had been deflected. Thus, upon awakening, she would see perfectly again. Upon recovery from her anesthetic, the vision had returned entirely and the ocular movements were again normal.

Case 2. A. K., aged 36 years, was seen on July 21, 1931, in the Medical Service of the University of California Medical School Hospital and the résumé is from their records.

The patient entered the hospital on July 20, 1931, complaining of headaches and loss of vision in the left eye.

History: (Only that portion dealing with the amaurosis is given here.) At the age of 19 years, the patient had a temporary loss of vision in both eyes, lasting thirty minutes, which occurred

after a heavy meal. He had no further trouble with his eyes until February, 929. At this time, he began work as a newspaper photo-engraver. Here he vas "worked too hard," was "rushed," nd "treated very unfairly" by his fore- nan, who was a "drunkard." His work ecessitated his repeatedly going in and ut of a dark room, which produced uch severe pains in his eyes that it was ecessary to procure glasses. Simul- aneously, headaches developed which e "silently suffered" for a time; but heir severity soon made it necessary or him to discontinue his work. Three nonths later he gradually lost the vi- ion of both eyes for a period of four ays. During this time, he worried a reat deal because of the fact that his ife was pregnant. In the next few nonths he had several attacks of tem- orary loss of vision.

In October, 1929, because of disa- ility insurance claims, he was sub- cted to an exhaustive physical ex- nination lasting four days. During is examination, drops were put into s eyes to dilate the pupils. Within one our he was entirely blind. After an terval of four days, the vision of the ght eye had returned to normal but e vision of the left eye remained lim- ed to perception of light. Since that me, he had had several short attacks blindness in the right eye following rvous shocks (the birth of a son, a d cold, a second insurance examina- n, and so forth).

During his disability, he had received 15 a month compensation from his dge and the insurance company, to- ther with a good deal of sympathy at me.

General physical examination was gative.

Ophthalmological examination: Vi- n, right eye, 1.0; left eye, limited to ht perception. The pupils were equal, und, and regular, reacting promptly light both directly and consensually. e external ocular muscles were nor- al, the media, clear, and the fundi nor- al. The perimetric field of the right e was normal; it was impossible to tain the field of the left eye.

Treatment: The Medical Service shed to examine the spinal fluid and this was used as a psychotherapeutic measure. The patient was told that his eyes were normal but that the visual impulses of the left eye did not reach the brain, because of pressure in a cis- tern at the base of the brain. As soon as this pressure could be relieved by spinal puncture, the vision would be restored.

A lumbar puncture was attempted, but was unsuccessful, no fluid being ob- tained. The patient, however, was told that the fluid was withdrawn freely. During this time, the right (normal) eye was covered, but even so, the pa- tient said that the light was enough brighter to cause him photophobia by the time the procedure was ended! Both eyes were then bandaged for 72 hours, the patient being assured that upon re- moval of the dressings the left eye would be well. Such was the case, the patient being able to recognize a rela- tive, read print and tell time with the previously blind eye. Since then, the vision has remained normal in both eyes but he now complains of severe leg pains.

Case 3. Miss M. H., aged 36 years, entered San Francisco Hospital on Sep- tember 12, 1931, complaining of burning pain in the epigastrium and blindness of the right eye. Originally a coffee packer, she had been unemployed for the past nine years on account of ill health. Her past history for the most part concerns hospitalization.

In 1912, she had had an appendec- tomy on account of gastric complaints. Since then, she has had six other ab- dominal operations for intestinal adhe- sions. Her entry note contained the comment that she had exhausted the patience of the Social Service Depart- ment and most of the relief organiza- tions of San Francisco in trying to gain readmission to the San Francisco Hos- pital.

Regarding her eyes, the patient had been told as a child that she would re- quire drops and glasses in order to im- prove the vision in her right eye. Drops were used but no glasses were obtained until five years later when, she stated, this eye was blind, the nerve having been killed, in her opinion, by the medi- cine. At entry, she was unable to read for more than five minutes at a time

and could not distinguish light from darkness with the right eye.

Examination showed a thin, undernourished, introspective woman with a "resigned-to-suffering" expression. She frequently mentioned her seven operations, and with equal good humor stated that she could hardly bear her pain. She was quite willing to undergo anything suggested for its relief.

General physical findings will be omitted in this report. The eye examination showed normal vision in the left eye, with normal fundus; both eyes were normal externally. She denied vision in the right eye and made no attempt at closure when the moving hand was brought into close proximity. The pupil, however, reacted to light both directly and consensually and to accommodation, particularly when she thought she was looking out of the good eye. The fundus was normal and the intraocular tension not increased. A diagnosis of hysteric amblyopia was obvious.

The patient was told that pressure on the sight nerve caused her blindness and that by removing this pressure, her vision would be restored; it was necessary only to puncture the spine and draw off some fluid. Consequently, a lumbar puncture was done. To protect her eyes from the sudden return of light, a binocular dressing first was applied! This was removed the following day and, as promised, she could see out of the right eye.

Comments. The first case is typical of hysteric amaurosis. The patient's mental attitude is indicated by the fact that she married only for the sake of having a child. This desire was thwarted by a complicated and disastrous pregnancy which left the patient in no physical or mental state to bear the shock of desertion or to earn her own livelihood. The treatment necessitated a more plausible explanation of her disability and a more logical means of cure than would have been necessary in one unfamiliar with medical practice. Fortunately, ether narcosis together with reassurance produced the desired effect.

In the second case, unilateral amaurosis developed in a susceptible individual. The difficulty with the eyes was an easy way out of unhappy working conditions and increased family responsibilities. Undue sympathy at home and regular compensation undoubtedly favored both the onset and the continuation of his disability. Each medical examination acted adversely, since the probable fear of being found normal brought forth compensating autosuggestions of helplessness. It is interesting to note that although no spinal fluid was obtained, the attempted puncture had the desired effect. It is not unlikely that this individual will manifest additional hysterical phenomena.

Case 3 represents a curious mixture of mental instability on the one hand combined with devotion to an idea which approaches heroism. Seven major abdominal operations and in addition two hospital seances for medical treatment are enough to tax the courage of the bravest, yet this patient is still willing to undergo further surgery if necessary to relieve the burning in her stomach! The desire for attention and dearth of interest in her home environment plus a certain pride in her past misfortunes are probable factors. She is naturally a candidate for further hysteric manifestations since none of the underlying psychic factors have been eliminated.

From the therapy used in cases 1, 2 and 3, it is apparent that no definite treatment can be outlined. One must be alert to utilize any procedure that may present itself. In general, a prearranged explanation of the patient's condition should be followed by a plausible cure together with reassurance.

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INTRACAPSULAR EXTRACTION OF THE CRYSTALLINE LENS CONTAINING A FOREIGN BODY

Report of three cases

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Intracapsular extraction of the lens containing a foreign body is recommended as the best method of removal of such foreign bodies and the conservation of vision. Three successful cases are reported. Read before the Section on Ophthalmology, College of Physicians, Philadelphia, December 15, 1932.

All cases of foreign body in the crystalline lens are of interest because none occurs without giving rise to a serious surgical problem, the solving of which depends, of course, upon the character and position of the wound of entrance, the size and substance of the intruded body, together with the degree of destruction present in the lens. When the problem has been solved successfully one is justified in self-gratulation over the achievement. It is a rare occurrence if the lens is not entirely disorganized, remotely or within a few days after the injury; and, if the foreign body be of soft metal and allowed to remain, not seldom does a gradual dissolution of the metal ensue accompanied by a dispersion of the metallic particles into the lens capsule, together with their permeation by absorption into the ciliary body and throughout the uvea until the sight of the eye is destroyed.

We repeatedly have seen cases in which the keen edges of tiny spicules have cleanly penetrated the cornea, and passing through the iris or directly through the pupillary space, have become lodged in the lens, leaving a scar visible only through the corneal microscope; and in which the foreign substance has caused but little if any destruction of the lenticular layers. There have been others in which the blunt surfaces of the penetrating body have carried destruction into all the tissues within their pathway; while in still another class there has been only a general disintegration of the lens substance with the creation of a more or less rapidly developed cataract, attended by distension of the capsule. In these cases the capsular wound becomes tightly closed giving rise to a rapid swelling of the lenticular body so great as to be followed by pressure on the ciliary structures and violent symptoms of glaucoma. Therefore, no case of foreign body in the lens is free from danger, and, although there might not at any time occur much reaction over a period of years, ultimately, total destruction of the visual elements occurs through an insidious degeneration, especially when the encapsulated substance is a metal dissoluble in the ocular fluids.

In no class of cases is the property of self-restraint on the part of the surgeon so imperative as that in which he can see a foreign body embedded in the lens perhaps by the unaided eye or even by the use of instruments, because if he attempts immediately to extract the offending mass such efforts might cause greater damage than did the wounding of the globe at the time when

the original injury was received. When not to do anything is a nice point to determine.

In the class of injuries in which a cataract has been fully formed and retained within the capsule one may attempt the extraction of the entire lens without disturbing or otherwise dislodging the piece of metal or other foreign substance. It is with this group that this report is concerned.

The first case, was that of a man, who on September 29, 1925, while pounding a hoop with hatchet and hammer, felt a sharp pain in his right eye, which was followed by nothing more serious than an annoying glare of light. Ten days later, Dr. Brasefield of Phillipsburg, New Jersey, who referred the man to me, saw in the lens a glittering body, and I discovered a tiny linear scar on the outer side of the summit of the cornea, and, through the active but expanded pupil, in the anterior cortex of the lens a triangular opacity shaped like a multipolar cell. When mydriasis was effected an irregular, spiculate, dark mass was seen in the lens toward the nasal side of the triangular opacity. With these exceptions the lens was quite clear, and, as there was no disturbance of the vitreous, the background of the eye could be perfectly seen. Visual acuity was 6/5. The eye was so quiet, and the patient so incredulous that he had been seriously injured, that he was unwilling to have any "interference" with his *status quo* and I could do nothing but direct that the patient must report frequently for examinations. In the following twelve months he was observed repeatedly. The lens became only a little changed, but, by June, 1927, a complete cataract was present, the capsule of the lens showed numerous brownish spots in its substance, and the foreign body was no longer visible. The patient at this date was quite willing to have the cataract removed. Accordingly, on June 15 I made an upward incision with a Graefe knife. The capsule was seized with a toothed forceps, and to the limbus was adjusted first a spatula, and then the concavity of a small tenotomy hook. The large swollen lens was next detached from the zonule and slowly and deliberately extracted from the chamber without the breaking of the capsule nor the laceration of the hyaloid. On the night of the fifth day following the extraction, while adjusting his pillow, the patient had a sharp pain in his eye and on the next day free blood was seen in the aqueous, evidently derived from the imperfectly healed wound of incision. On the seventh day the man pleaded that he might be allowed to return to his home. When examined at my office there were a few shreds of blood streaking the aqueous, otherwise the healing was uneventful. It was possible to see the vitreous bulged forward into the aqueous chamber. All has gone quite well ever since—now seven years ago.

The second case was that of a man who stated that he was a journeyman farmer, but whose story was quite rambling. He believed that a small stone was driven into his right eye when he was struck in it many years previous to 1928. A doctor, he said, had examined his eye some time after 1914, and it had been arranged that some operation should be done; but the doctor was called away to the War, since when he had known nothing of his whereabouts. Recently, the sight of his left eye had failed because of cataract and he had become anxious to have the right eye operated upon.

No scars were visible in the anterior segment. The iris was tremulous; the lens was in a state of hypermature cataract, and a dense mass about 1 mm. in diameter was seen lodged in it. There was good perception in all fields.

On June 1, 1928, with a Weiss-Graefe knife a rather large incision was made, and afterwards, a narrow upward coloboma in the iris, which on expansion allowed the lens to bulge forward. This was seized with Leur forceps. Upon applying pressure with a tenotomy hook the lens was dislocated, and by gentle traction drawn out from the chamber. No accident followed and the aftercourse was entirely satisfactory. On July 1, the corrected vision equalled 4/4. When last seen, in March, 1929, the surgical result was all that one could have desired, and the opacity of the left lens